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MICROECONOMICS

SIXTH EDITION



ROBERT S. PINDYCK
DANIEL L. RUBINFELD

Microeconomics

Sixth Edition

Robert S. Pindyck

Massachusetts Institute of Technology

Daniel L. Rubinfeld

University of California, Berkeley

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1970s and early 1980s. Because the demands for such commodities as coffee, cocoa, tin, and copper are much more elastic, attempts by producers to cartelize these markets and raise prices have largely failed. In each case, the elasticity of market demand limits the potential monopoly power of individual producers.

The Number of Firms

The second determinant of a firm's demand curve—and thus of its monopoly power—is the number of firms in its market. Other things being equal, the monopoly power of each firm will fall as the number of firms increases: As more and more firms compete, each firm will find it harder to raise prices and avoid losing sales to other firms.

What matters, of course, is not just the total number of firms, but the number of “major players”—firms with significant market share. For example, if only two large firms account for 90 percent of sales in a market, with another 20 firms accounting for the remaining 10 percent, the two large firms might have considerable monopoly power. When only a few firms account for most of the sales in a market, we say that the market is highly *concentrated*.⁹

It is sometimes said (not always jokingly) that the greatest fear of American business is competition. That may or may not be true. But we would certainly expect that when only a few firms are in a market, their managers will prefer that no new firms enter. An increase in the number of firms can only reduce the monopoly power of each incumbent firm. An important aspect of competitive strategy (discussed in detail in Chapter 13) is finding ways to create **barriers to entry**—conditions that deter entry by new competitors.

Sometimes there are natural barriers to entry. For example, one firm may have a *patent* on the technology needed to produce a particular product. This makes it impossible for other firms to enter the market, at least until the patent expires. Other legally created rights work in the same way—a *copyright* can limit the sale of a book, music, or a computer software program to a single company, and the need for a government *license* can prevent new firms from entering the markets for telephone service, television broadcasting, or interstate trucking. Finally, *economies of scale* may make it too costly for more than a few firms to supply the entire market. In some cases, economies of scale may be so large that it is most efficient for a single firm—a *natural monopoly*—to supply the entire market. We will discuss scale economies and natural monopoly in more detail shortly.

barrier to entry Condition that impedes entry by new competitors.

In §7.4, we explain that a firm enjoys economies of scale when it can double its output with less than a doubling of cost.

The Interaction Among Firms

The ways in which competing firms interact is also an important—and sometimes the most important—determinant of monopoly power. Suppose there are four firms in a market. They might compete aggressively, undercutting one another's prices to capture more market share. This could drive prices down to nearly competitive levels. Each firm will fear that if it raises its price it will be undercut and lose market share. As a result, it will have little monopoly power.

On the other hand, the firms might not compete much. They might even collude (in violation of the antitrust laws), agreeing to limit output and raise prices.

⁹A statistic called the *concentration ratio*, which measures the percentage of sales accounted for by, say, the four largest firms, is often used to describe the concentration of a market. Concentration is one, but not the only, determinant of market power.

Because raising prices in concert rather than individually is more likely to be profitable, collusion can generate substantial monopoly power.

We will discuss the interaction among firms in detail in Chapters 12 and 13. Now we simply want to point out that, other things being equal, monopoly power is smaller when firms compete aggressively and is larger when they cooperate.

Remember that a firm's monopoly power often changes over time, as its operating conditions (market demand and cost), its behavior, and the behavior of its competitors change. Monopoly power must therefore be thought of in a dynamic context. For example, the market demand curve might be very inelastic in the short run but much more elastic in the long run. (Because this is the case with oil, the OPEC cartel enjoyed considerable short-run but much less long-run monopoly power.) Furthermore, real or potential monopoly power in the short run can make an industry more competitive in the long run: Large short-run profits can induce new firms to enter an industry, thereby reducing monopoly power over the longer term.

10.4 The Social Costs of Monopoly Power

In a competitive market, price equals marginal cost. Monopoly power, on the other hand, implies that price exceeds marginal cost. Because monopoly power results in higher prices and lower quantities produced, we would expect it to make consumers worse off and the firm better off. But suppose we value the welfare of consumers the same as that of producers. In the aggregate, does monopoly power make consumers and producers better or worse off?

We can answer this question by comparing the consumer and producer surplus that results when a competitive industry produces a good with the surplus that results when a monopolist supplies the entire market.¹⁰ (We assume that the competitive market and the monopolist have the same cost curves.) Figure 10.10 shows the average and marginal revenue curves and marginal cost curve for the monopolist. To maximize profit, the firm produces at the point where marginal revenue equals marginal cost, so that the price and quantity are P_m and Q_m . In a competitive market, price must equal marginal cost, so the competitive price and quantity, P_c and Q_c are found at the intersection of the average revenue (demand) curve and the marginal cost curve. Now let's examine how surplus changes if we move from the competitive price and quantity, P_c and Q_c to the monopoly price and quantity, P_m and Q_m .

Under monopoly, the price is higher and consumers buy less. Because of the higher price, those consumers who buy the good lose surplus of an amount given by rectangle A. Those consumers who do not buy the good at price P_m but who would buy at price P_c also lose surplus—namely, an amount given by triangle B. The total loss of consumer surplus is therefore $A + B$. The producer, however, gains rectangle A by selling at the higher price but loses triangle C, the additional profit it would have earned by selling $Q_c - Q_m$ at price P_c . The total gain in producer surplus is therefore $A - C$. Subtracting the loss of consumer surplus from the gain in producer surplus, we see a net loss of surplus given by $B + C$. This is the *deadweight loss from monopoly power*. Even if the monopolist's profits were taxed away and redistributed to the consumers of its products, there would be an inefficiency because output would be lower than under conditions of competition. The deadweight loss is the social cost of this inefficiency.

Figure 10.10 To explain that consumer surplus is the total benefit or value that consumers receive beyond what they pay for a good; producer surplus is the analogous measure for producers.

¹⁰If there were two or more firms, each with some monopoly power, the analysis would be more complex. However, the basic results would be the same.

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